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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/676,185 | 09/30/2003 | Hoo Y. Chung | 758.1149USD3 | 7098 |

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EXAMINER

GREENE, JASON M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1724

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/676,185

Applicant(s)

CHUNG ET AL.

Examiner

Jason M. Greene

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 145,147-163 and 165-179 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 145,147-163 and 165-179 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Response to Arguments

1. Applicant's arguments filed 03 December 2004 have been fully considered but they are not persuasive.

Applicants argue in page 6 that the instant application discloses forming the fine fiber layer from polymeric materials not disclosed by the Kahlbaugh reference (U.S. Patent No. 5,672,399). Specifically, Applicants cite Examples 1-6 in the specification which teach various polymeric materials comprising additives and/or cross-linking agents. However, the Examiner notes that all of the cited Examples are directed to incorporating the additives and/or cross-linking agents into nylon (polyamide) materials. While these treated polyamide materials may outperform the simple nylons disclosed by Kahlbaugh, Applicants fail to address the other materials disclosed by Kahlbaugh. As noted in paragraph 8 of the prior action, Kahlbaugh teaches forming the fine fibers from polypropylene, polyvinyl chloride (PVC), cellulose ester, polyacrylonitrile, polyamides, polystyrene, polyvinylidene fluoride, polyvinylidene chloride, glass and polycarbonate. Since several of these materials have very high melting points and are inert in aqueous environments (e.g. glass, polycarbonate and polyacrylonitrile), the fine fibers formed from these materials will exhibit the recited resistance properties. Therefore,

eventhough Applicants disclose forming the fine fiber layer from nylon materials that have superior resistance properties to known nylon materials, the prior art still anticipates a fine fiber layer having the recited resistance properties.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 145, 147-163 and 165-179 are rejected under 35 U.S.C. 102(b) as being anticipated by Kahlbaugh et al. '399.

Kahlbaugh et al. '399 discloses a fine fiber layer comprising a fiber having a diameter of about 0.1 microns in Fig. 7, col. 3, lines 27-64, and col. 16, lines 20-64.

Kahlbaugh et al. '399 does not explicitly disclose at least 50 percent of the fine fiber remaining unchanged or the layer retaining greater than 30 percent of the fine fiber layer filtration efficiency after exposure to air at 140 °F or greater than 160 °F and 100 percent relative humidity for 1 to 16 hours.

However, both Applicants and Kahlbaugh et al '399 disclose forming the fine fiber from the same materials. Specifically, Applicants teach forming the fine fiber layer from polypropylene, polyvinyl chloride (PVC), cellulose ester, polyacrylonitrile, polyamides, polystyrene, polyvinylidene fluoride or polyvinylidene chloride in page 14, line 7 to page 16, line 17. Kahlbaugh et al. '399 teaches forming the fine fibers from identical materials

in page 16, lines 53-64. Since Applicants and Kahlbaugh et al '399 both teach the fine fiber layer being formed from the same material, the fine fibers of Kahlbaugh et al. '399 would inherently have the same heat and humidity resistance properties as the fine fibers of the present invention.

Furthermore, Kahlbaugh et al. '399 explicitly teaches forming the fine fibers from glass in col. 16, lines 48-55. Since glass fibers have a very high melting point and are inert with respect to water vapor, one of ordinary skill in the art at the invention was made would have expected the fine glass fibers of Kahlbaugh et al. to exhibit the recited resistance properties.

Additionally, Kahlbaugh et al. '399 also explicitly teaches forming the fine fibers from polycarbonate and polyacrylonitrile in col. 16, lines 56-64. Since polycarbonate and polyacrylonitrile both have high melting points and are resistant to hot, humid environments, one of ordinary skill in the art at the time the invention was made would have expected fine fibers formed from polycarbonate or polyacrylonitrile to exhibit the recited resistance properties

Since the prior art discloses specific examples lying within the claimed ranges of the fine fiber having a diameter of 0.01 to 0.5 microns, 0.01 to 0.2 microns, and a diameter of 0.1 to 0.2 microns, these limitations are anticipated.

Conclusion

4. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (571) 272-1157. The examiner can normally be reached on Monday - Friday (9:00 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1724

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason M. Greene
Examiner
Art Unit 1724



jmg
February 19, 2005

DUANE SMITH
PRIMARY EXAMINER

U-PA
2-22-05